(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 6 January 2005 (06.01.2005)

PCT

(10) International Publication Number WO 2005/001753 A1

(51) International Patent Classification⁷:

G06K 9/00

(21) International Application Number:

PCT/US2004/019917

(22) International Filing Date: 21 June 2004 (21.06.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/480,008 21 June 2003 (21.06.2003) US 60/519,792 13 November 2003 (13.11.2003) US 60/523,068 18 November 2003 (18.11.2003) US

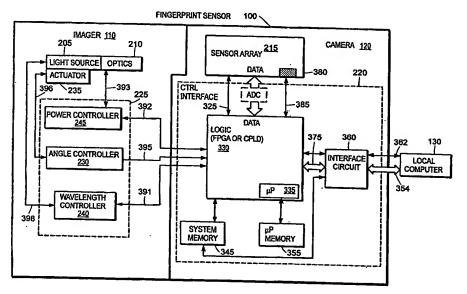
- (71) Applicant (for all designated States except US): APRILIS, INC. [US/US]; 5 Clock Tower Place, Suite 200, Maynard, MA 01754 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): WALDMAN, David [US/US]; 31 Mitchell Road, Concord, MA 01742 (US). FEDELE, Vincent [US/US]; Post Office Box 061, Harvard, MA 01451 (US). INGWALL, Richard, T.

[US/US]; 115 Dartmouth Street, Newton, MA 02465 (US). RAGUIN, Daniel, H. [US/US]; 234 Newtown Road, Acton, MA 01720 (US). BERG, John, S. [US/US]; 58 Jefferson Road, Franklin, MA 02038 (US). JOSEPH, Joby [IN/US]; Waltham, MA 02453 (US). KENT, David, L. [US/US]; 10 Frost Street, Framingham, MA 01701 (US).

- (74) Agents: MEAGHER, Timothy, J. et al.; Hamilton, Brook, Smith & Reynolds, P.C., 530 Virginia Road, P.O. Box 9133, Concord, MA 01742-9133 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: ACQUISITION OF HIGH RESOLUTION BOIMETRIC IMAGES



(57) Abstract: An apparatus for image acquisition of topological features of the surface of skin. The apparatus comprises a wave-guide, having an entrance edge and top and bottom surfaces; a light source, configured to direct a light beam at the entrance edge of the waveguide; a skin contact layer, disposed at or near the top surface of the waveguides; a holographic optical element (HOE), disposed at the top or at the bottom surfaces of the waveguide, configured to diffract the light beam incident from the light source to the skin contact layer; a sensor array, configured to detect light reflected from the surface of skin in contact with skin contact layer; and means for compensating for changes in the Bragg matching condition of the HOE due to temperature.

WO 2005/001753 A1

GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

 before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.